

(19)日本国特許庁 (JP)

## (12) 公開特許公報 (A)

(11)特許出願公開番号

特開平10-75825

(43)公開日 平成10年(1998)3月24日

(51)IPC1' A 47 B 3/091

特許記号 特許出願公開番号

PI A 47 B 3/091

技術表示箇所

A  
D

審査請求 未請求 請求項の数5 PD (全6頁)

(21)出願番号 特願平8-257690  
 (22)出願日 平成8年(1996)9月5日

(71)出願人 000110321  
 トヨタ車体株式会社  
 愛知県刈谷市一里山町金山100番地  
 (72)発明者 逃田 道和  
 愛知県岡崎市上之段395番地1 株式会  
 社トヨタ車体研究所内  
 (72)発明者 両田 道  
 愛知県岡崎市上之段395番地1 株式会  
 社トヨタ車体研究所内  
 (72)発明者 逃山 和広  
 愛知県刈谷市一里山町金山100番地 トヨ  
 タ車体株式会社内  
 (74)代理人 弁理士 守田 賢一

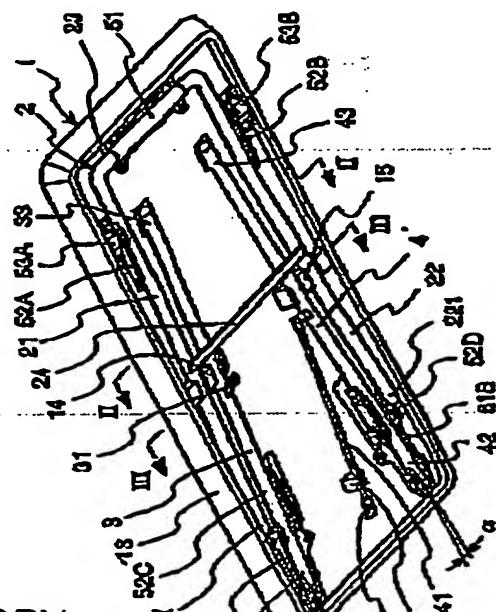
最終頁に続く

(54)【発明の名称】 折り畳み式テーブル

## (55)【要約】

【課題】 テーブル板の裏面に脚部を互いに干渉するこ  
 となく折り畳むことができるとともに、テーブル使用時  
 には脚部の脚部面間隔を十分に広く確保してテーブルの安  
 定性を向上させる。

【解決手段】 テーブル板1裏面の一端部に脚部2が設  
 けられ、脚部2は左右の脚部21、22を連結する基部  
 23を有する略U字形に一体成形されている。テーブル  
 板1裏面の他端部には脚部3、4が左右位置にそれぞれ  
 設けられ、脚部3、4は先端33、43へ向け相対面間隔  
 が漸次狭まる八字状をなして脚部21、22の内側に折  
 り畳まれている。テーブル使用時には脚部2は基部23  
 を中心に引き起こし回動させられ、一方、脚部3、4は  
 各先端32、42を中心にしてテーブル板1裏面から、  
 先端33、43へ向け相対面間隔が漸次広がる八字状に引  
 き起こし回動させられる。



BEST AVAILABLE COPY

(2)

1

## 【特許請求の範囲】

【請求項1】 テーブル板(1)と。

前記テーブル板(1)裏面の一端部に設けられ、左右の脚部(21, 22)を有して、テーブル収納時はテーブル板(1)裏面に沿って折り畳まれ、使用時にテーブル板(1)裏面から引き起こし回動させられる第1の脚体(2)と、

前記テーブル板(1)裏面の他端部の左右位置にそれぞれ設けられ、テーブル収納時はテーブル板(1)裏面に沿って折り畳まれて前記第1の脚体(2)の左右の脚部(21, 22)の内側に位置するとともに、使用時には各基端(32, 42)を中心にして前記テーブル板(1)裏面からそれぞれ引き起こし回動させられて、各先端(33, 43)が前記第1の脚体(2)の左右の脚部(21, 22)の先端(211, 221)の間隔と略同一間隔ないしこれより間隔が大きくなる位置へ進出する桿状の第2の脚体(3)および第3の脚体(4)とを具備する折り畳み式テーブル。

【請求項2】 前記第1の脚体(2)は、前記左右の脚部(21, 22)を連結する基部(23)を有する略U字形に一体成形されたものである請求項1に記載の折り畳み式テーブル。

【請求項3】 前記第1の脚体(2)の左右の脚部(21, 22)は、先端(211, 221)へ向け渐次相対間隔が広がる八字状をなしている請求項1又は2に記載の折り畳み式テーブル。

【請求項4】 前記第2の脚体(3)および第3の脚体(4)は、先端(33, 43)へ向け相対間隔が漸次狭まる八字状をなして前記テーブル板(1)裏面に沿って折り畳まれ、使用時には各基端(32, 42)を中心にして前記テーブル板(1)裏面から、先端(33, 43)へ向け相対間隔が漸次広がる八字状に引き起こし回動させられるものである請求項1ないし3のいずれか一つに記載の折り畳み式テーブル。

【請求項5】 前記第2の脚体(3)および第3の脚体(4)は各基端(32, 42)の回転軸(617)が前記テーブル板(1)の外側方へ下り傾斜している請求項1ないし4のいずれか一つに記載の折り畳み式テーブル。

## 【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は折り畳み式テーブルに関し、特に、アウトドア用品として車載に適した折り畳み式テーブルの構造改良に関する。

【0002】

【従来の技術】 図8, 図9に従来の車載用折り畳み式テーブルの一例を示す。図において、テーブル板1の裏面には一端と他端にそれぞれ脚体7, 8が設けてある。こ

特開平10-75825

2

を相な基部73, 83とを有している。また、左右の脚部71, 72, 81, 82は中間位置で連結部付74, 84により結合されている。基部73, 83はヒンジプラケット91, 92によりテーブル板1の裏面に回動自在に結合されており、テーブル収納時は図8に示すように、各脚体7, 8はテーブル板1の裏面に沿って折り畳まれ、テーブル使用時には図9に示すように、基部73, 83を中心で各脚体7, 8をテーブル板1裏面から引き起こし回動させる。

【0003】

【発明が解決しようとする課題】 ところで、上記従来の折り畳み式テーブルにおいて、使用時のテーブルを適当なものにするためには各脚体7, 8の脚部長を適正に確保する必要があるが、テーブル板1の裏面に沿って脚体7, 8を折り畳むと、往々にして両脚体7, 8の脚部71, 72, 81, 82が互いに干渉してしまう。そこで、従来は図9に示すように、一方の脚体8の脚部間隔aを他方の脚部7のそれより小さくして、脚体8を脚体7の内方に位置させることにより脚部71, 72, 81, 82間の干渉を回避している。しかし、テーブル板1の幅には車両の収納スペース内に納まるよう最小限となっているため、脚体7の内方に位置する脚体8は脚部間隔aが過小となってテーブル使用時に安定性を損なうという問題があった。

【0004】 本発明はこのような課題を解決するもので、テーブル板の裏面に脚体を互いに干渉することなく折り畳むことができるとともに、テーブル使用時には脚体の脚部間隔を十分に広く確保してテーブルの安定性を向上させることができ、可能な折り畳み式テーブルを提供することを目的とする。

【0005】

【課題を解決するための手段】 上記目的を達成するため、本第1発明では、テーブル板(1)と、テーブル板(1)裏面の一端部に設けられ、左右の脚部(21, 22)を有して、テーブル収納時はテーブル板(1)裏面に沿って折り畳まれ、使用時にテーブル板(1)裏面から引き起こし回動させられる第1の脚体(2)と、テーブル板(1)裏面の他端部の左右位置にそれぞれ設けられ、テーブル収納時はテーブル板(1)裏面に沿って折り畳まれて第1の脚体(2)の左右の脚部(21, 22)の内側に位置するとともに、使用時には各基端(32, 42)を中心にしてテーブル板(1)裏面からそれ引き起こし回動させられて、各先端(33, 43)

が第1の脚体(2)の左右の脚部(21, 22)の先端(211, 221)の間隔と略同一間隔ないしこれより間隔が大きくなる位置へ進出する桿状の第2の脚体(3)および第3の脚体(4)とを具備している。

【0006】 本第1発明においては、第2および第3の

(3)

3

い。そして、使用時には、第2および第3の脚体はテーブル板裏面からそれぞれ外方へ引き起こし回動させられて、呂先端が第1の脚体の左右の脚部の先端の間隔と略同一間隔ないしこれより間隔が大きくなる位置へ突出させられるから、脚部間隔は十分に広く確保され、テーブルの安定性が実現される。

【0007】本第2発明では、第1の脚体(2)は、左右の脚部(21, 22)を連結する基部(23)を有する略U字形に一体成形されたものである。

【0008】本第2発明においては、左右の脚部を有する第1の脚体が一体成形により簡易に製造される。

【0009】本第3発明では、第1の脚体(2)の左右の脚部(21, 22)は、先端(211, 221)へ向け漸次相対間隔が拡がる八字状をなしている。

【0010】本第3発明においては、第1の脚体の左右の脚部が八字状をしているから、使用時のテーブルの安定性がさらに増す。

【0011】本第4発明では、第2の脚体(3)および第3の脚体(4)は、先端(33, 43)へ向け相対間隔が漸次狭まる八字状をなしてテーブル板(1)裏面に沿って折り畳まれ、使用時には各基端(32, 42)を中心にしてテーブル板(1)裏面から、先端(33, 43)へ向け相対間隔が漸次拡がる八字状に引き起こし回動させられるものである。

【0012】本第4発明においては、第2および第3の脚体は第1の脚体と干渉することなくテーブル板裏面に沿って折り畳まれるとともに、使用時には先端へ向け相対間隔が漸次拡がる八字状に引き起こし回動させられて、使用時の安定性がさらに増す。

【0013】本第5発明では、第2の脚体(3)および第3の脚体(4)は各基端(32, 42)の回転軸(617)がテーブル板(1)の外側方へ下り傾斜している。

【0014】本第5発明においては、回転軸がテーブル板の外側方へ下り傾斜していることにより、第2および第3の脚体は使用の際の引き起し回動時に外方へ大きく振り出される。これにより、テーブル使用時の脚部間隔は十分に広くなり、テーブルの安定性がより向上する。

【0015】

【発明の実施の形態】図1には脚体を折り畳んだ状態の折り畳み式テーブルの裏面斜視図を示す。図において、長方形をなすテーブル板1は樹脂材のブロード成形等により製造され、その裏面には脚体2とこれの内方に脚体3, 4が設けてある。脚体2はパイプ材を略U字形に屈曲成形したもので、テーブル板1の長辺に沿った左右(図の上下)の脚部21, 22とこれらを連結する基部23とから構成されている。脚体2は基部23がヒンジプラケット51により回動自在にテーブル板1裏面に接

特開平10-75825

4

が増大する八字状となっている。これら脚部21, 22は図2に示すように、テーブル板1の裏面に形成された長辺の内張断面凹所11, 12内に位置して、脚部21, 22の突出高がテーブル板1の脚部13の突出高と同程度になるようにしてある。また、呂脚部21, 22は中間位置が、テーブル板1の裏面に突出形成された脚止部14, 15(図1)の欠凹形凹所141, 151(図3)内に嵌入して位置決めされるとともに、長板状の連結板24によって互いに結合されている。さらに、基部23に近い呂脚部21, 22の外側面には、テーブル使用のために脚部21, 22を引き起こし回動させた際に、脚部21, 22を引き起こし状態に保持するためのリンク機構52A, 52Bが付設されている。リンク機構52A, 52Bの基本構造は脚部3, 4に設けたものと同一であり、後述する。

【0016】脚体2の左右の脚部21, 22に沿った内側とはそれぞれ脚部3, 4が位置している。これら脚部3, 4はパイプ材を使用した棒状体で、テーブル板1の脚部に対してそれぞれ角度で内方へ傾斜し、先端3, 4に向け漸次相対間隔が狭まる八字状に配設されている。各脚部3, 4の基端32, 42はそれぞれヒンジプラケット61A, 61Bによりテーブル板1の裏面に回動自在に結合されており、各ヒンジプラケット61A, 61Bと脚部3, 4の基端部側面との間にリンク機構52C, 52Dが設けられている。ヒンジプラケット61Aとリンク機構52Cの詳細を図4に示す。ヒンジプラケット61Aは金属板材の両側端を上方へ屈曲成形したもので、端部と左右の側面に設けた取付穴611, 612, 613によりテーブル板1裏面に固定されている。また、左右の脚部には軸受け穴614, 615が設けられ、これに脚部基端32の脚部34を合致させて、軸受け穴614, 615を接着脚部34内に回転軸たるピン体617を挿入することにより、脚部3を回動自在に結合している。なお、軸受け穴614, 615間に架設された上記ピン体617はテーブル板1の内側(図4の手前側)から外側へ向けて水平面との角度をなして下り傾斜している。

【0017】リンク機構52Cは二つのリンクプレート521, 522を互いに回動自在に直列結合したもので、リンクプレート521の一端はヒンジプラケット61Aの脚部の取付穴616に回動自在にピン結合され、リンクプレート522の一端は脚部3の脚面に回動自在にピン結合されている。また、両リンクプレート521, 522の結合部にはストップ片523が設けられて、これらリンクプレート521, 522が反対側へ回動することを阻止している。なお、ヒンジプラケット61Bとリンク機構52Dの構造は同一である。

【0018】上記各脚部3, 4も脚部2と同様に、テー

(4)

特開平10-75825

5

の裏面に突出形成された保止部14、15の丸円形凹所142、152(図3)内に嵌入して位置決めされている。先に説明した脚体2に付設されたリンク板部52A、52Bは、これを構成するリンクプレートの一端がヒンジブレケットに代えて軸受けプレート53A、53Bに結合されている点が異なるのみで、他の構造は同一である。なお、脚体4には中間位置に、連結部材41の一端が回動自在に結合されて、テーブル板1下面の保止部16に固定されている。一方、脚体3の中間位置には連結部材41の先端部411が保止される凸部31が設けられている。

【0019】このような構造の折り畳み式テーブルにおいて、テーブルを使用する場合には、脚体2の左右の脚部21、22を、基部23を中心に引き起こし回動させ、続いて左右の脚体3、4を、連結部材34(図4)内に挿入されたピン部617を中心に引き起し回動させる。この状態を図5に示す。引き起された脚体2、3、4は、これらに付設されたリンク板部52A～52Dによって引き起こし状態に保持される。また、連結部材41の先端部411は凸部31に保止されて両脚体3、4が一体に結合される。この状態で、各脚体2、3、4はテーブル板1の長手方向で図6に示すように、テーブル板1の外下方へ斜めに延びて、テーブル使用時のこの方向における安定性が確保される。一方、テーブル板1の幅方向では、図7に示すように、脚体2は左右の脚部21、22がテーブル板1の幅にはば等しい間隔で八字状をなすとともに、左右の各脚体3、4は、既述のようにテーブル板1の側縁に対して角度αで傾斜して設けられていること(図1)および回動中心となるピン部617(図4)が水平面とθの角度をなしていることにより、それを引出し時にテーブル板1の外方へ回動して各脚体3、4の先端33、43が左右の脚部21、22の先端の間隔と略同一直隔ないしこれより間隔が大きくなる位置へ八字状をなすように進出させられ、この方向での安定性が確保される。特に、回動中心が傾斜していることによって、各脚体3、4はテーブル板1の内本

\*方から外方へ大きく張り出される。

【0020】上記実施形態では、左右の脚体3、4をテーブル板1の側縁に対して角度αで傾斜して設け、さらに回転するピン部617を傾けたことにより、脚体3、4は内方から外方へより大きく張り出されるが、いずれか一方のみの傾斜を採用しても良い。また、脚体2は左右の脚部21、22をそれぞれ分離して設けても良く、この場合、各脚部21、22の基部回転軸を傾けて設ければ、引き起こし回動時に左右の脚部が八字状に開いて、安定性をより向上させることができる。

【0021】

【発明の効果】以上のように、本発明の折り畳み式テーブルによれば、テーブル板の裏面に脚体を互いに干渉することなく折り畳むことができるとともに、テーブル使用時には脚体の脚部間隔を十分に広く確保してテーブルの安定性を向上させることができる。

【図面の簡単な説明】

【図1】本発明の一実施形態を示す。脚体折り畳み状態の折り畳み式テーブルを裏面から見えた斜視図である。

20 【図2】図1のII-II線に沿った断面図である。

【図3】図1のIII-III線に沿った断面図である。

【図4】脚体の基部結合部の分解斜視図である。

【図5】脚体引き起こし状態の折り畳み式テーブルを裏面から見た斜視図である。

【図6】脚体引き起こし状態の折り畳み式テーブルの長手方向の斜視断面図である。

【図7】脚体引き起こし状態の折り畳み式テーブルの幅方向の斜視断面図である。

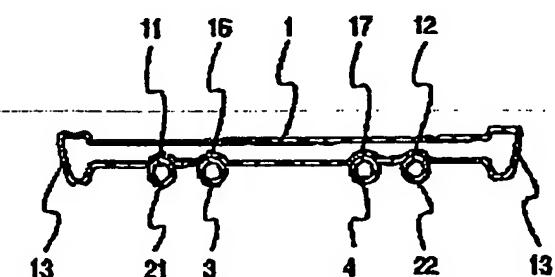
【図8】従来例を示す、脚は折り畳み状態の折り畳み式テーブルを裏面から見た斜視図である。

【図9】脚体引き起こし状態の折り畳み式テーブルを裏面から見た斜視図である。

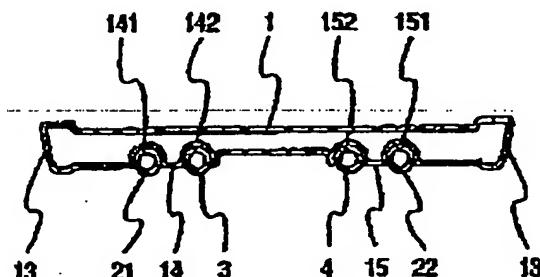
【符号の説明】

1～テーブル板、2～脚体、21、22～脚部、21、22～先端、23～基部、3、4～脚体、32、42～基部、33、43～先端、617～ピン部。

【図2】



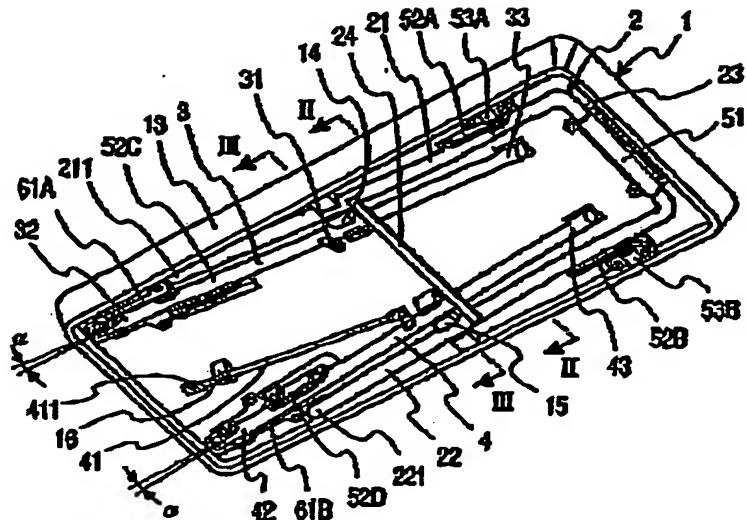
【図3】



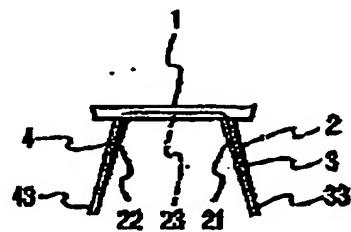
(5)

特開平10-75825

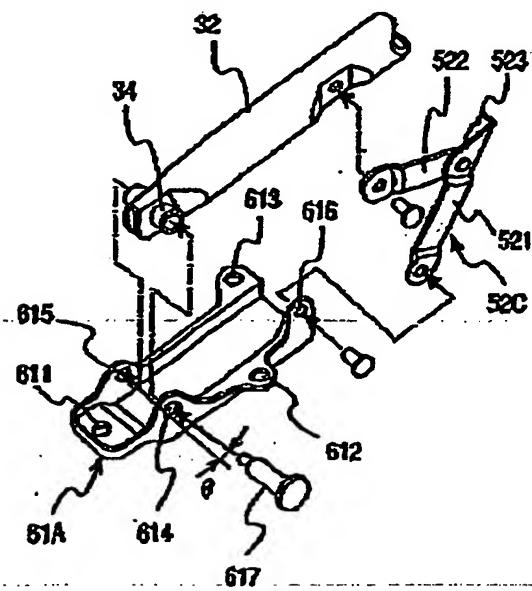
【図1】



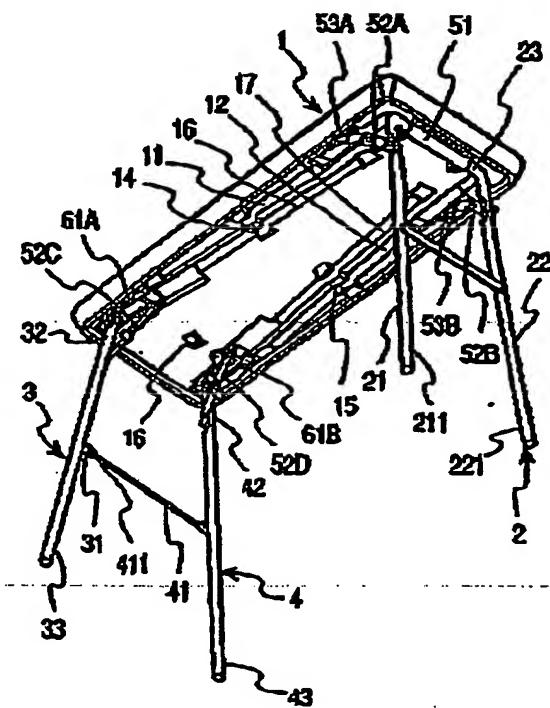
【図7】



【図4】



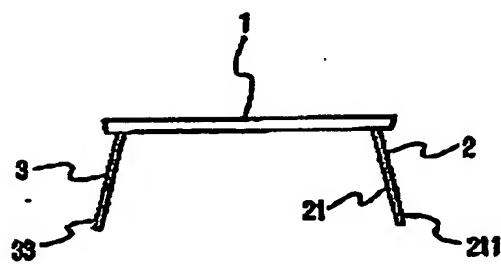
【図5】



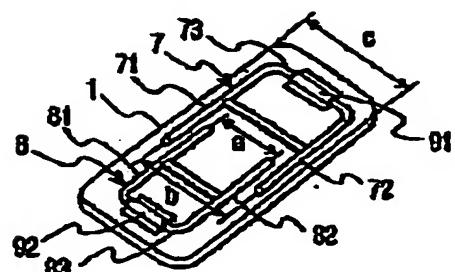
(5)

特開平10-75825

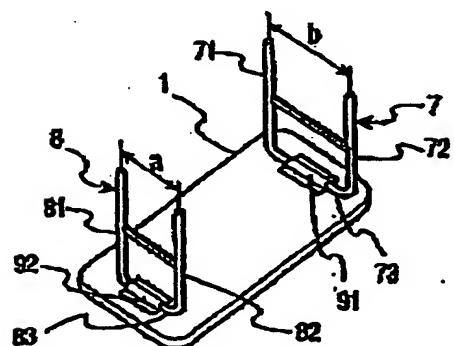
【図6】



【図8】



【図9】



---

フロントページの続き

(7)発明者 石橋 桂男  
愛知県刈谷市一里山町金山100番地 トヨ  
タ車体株式会社内

(19) JAPANESE PATENT OFFICE (JP)

(12) Official Gazette for Laid-Open Patent Applications (A)

(11) Japanese Laid-Open Patent Application (Kokai) No. H10-75825

(43) Disclosure Date: March 24, 1998

(51) Int. Cl. <sup>5</sup>	Class. Symbols	JPO File Nos.	F1	Tech. Indic.
A 47 B 3/091			A 47 B 3/091	A
				D

Request for Examination: Not yet submitted

Number of Claims: 5 FD (Total of 6 pages [in original])

(21) Application No. H08-257690

(22) Filing Date: September 5, 1996

(71) Applicant: 000110321

Toyota Auto Body Co., Ltd.

100 Kanayama, Ichiriyama-cho, Kariya-shi, Aichi

(72) Inventor: Kiyokazu Ikeda

c/o Toyota Body R&D Co., Ltd.

395-1 Uenodan, Kokubu-shi, Kagoshima

(72) Inventor: Tsutomu Sonoda

c/o Toyota Body R&D Co., Ltd.

395-1 Uenodan, Kokubu-shi, Kagoshima

(72) Inventor: Toshihiro Sugiyama

c/o Toyota Auto Body Co., Ltd.

100 Kanayama, Ichiriyama-cho, Kariya-shi, Aichi

(72) Inventor: Matsuo Ishibashi

c/o Toyota Auto Body Co., Ltd.

100 Kanayama, Ichiriyama-cho, Kariya-shi, Aichi

(74) Agent: Kenichi Morita, Patent Attorney

(54) [Title of the Invention] Folding Table

(57) [Abstract]

[Object] To allow leg units to be folded without interfering with each other on the rear of a table top, and to enhance table stability by ensuring adequate space between the leg components of the leg units during use of the table.

**[Means for Solution]** A leg unit 2 is provided at one end on the rear of a table top 1, and the leg unit 2 is formed in one substantially U-shaped piece, having a proximal component 23 linking left and right leg components 21 and 22. Leg units 3 and 4 are provided on the left and right, respectively, at the other end on the rear of the table top 1, and the leg units 3 and 4 together form a tapering shape so that the distance therebetween gradually narrows toward distal ends 33 and 43 when folded to the inside of the leg components 21 and 22. When the table is to be used, the leg unit 2 is pulled out and rotated around the proximal component 23, whereas the leg units 3 and 4 are pulled out and rotated away from the rear of the table top 1 around proximal ends 32 and 42, respectively, so that their tapering shape becomes inverted, with the distance therebetween gradually widening toward the distal ends 33 and 43.

## **Claims**

**Claim 1** A folding table, comprising:

a table top (1);

a first leg unit (2) that is provided at one end on the rear of the table top (1), has left and right leg components (21, 22), is folded in toward the rear of the table top (1) when the table is to be put away, and is pulled out and rotated away from the rear of the table top (1) when the table is to be used; and

a second leg unit (3) and third leg unit (4) that are in the form of poles that are provided on the left and right, respectively, at the other end on the rear of the table top (1), are located to the inside of the left and right leg components (21, 22) of the first leg unit (2) when folded in toward the rear of the table top (1) when the table is to be put away, and are pulled out and rotated away from the rear of the table top (1) around proximal ends (32, 42), respectively, when the table is to be used, so that distal ends (33, 43) thereof move to positions where the spacing therebetween is equal to or greater than the spacing between distal ends (211, 221) of the left and right leg components (21, 22) of the first leg unit (2).

**Claim 2** The folding table according to Claim 1, wherein the first leg unit (2) is formed in one substantially U-shaped piece, having a proximal component (23) linking the left and right leg components (21, 22).

**Claim 3** The folding table according to Claim 1 or 2, wherein the left and right leg components (21, 22) of the first leg unit (2) together form a tapering shape so that the distance therebetween gradually widens toward distal ends (211, 221).

**Claim 4** The folding table according to any of Claims 1 to 3, wherein the second leg unit (3) and the third leg unit (4) together form a tapering shape so that the distance therebetween gradually narrows toward distal ends (33, 43) when folded in toward the rear of the table top (1), and are pulled out and rotated away from the rear of the table top (1) around proximal ends (32, 42), respectively, when the table is to be used, so that their tapering shape becomes inverted, with the distance therebetween gradually widening toward the distal ends (33, 43).

**Claim 5** The folding table according to any of Claims 1 to 4, wherein the second leg unit (3) and the third leg unit (4) are such that the rotational axis (617) of the proximal ends (32, 42) angles downward to the outside of the table top (1).

## **Detailed Description of the Invention**

[0001]

### **Technological Field to Which the Invention Belongs**

The present invention relates to a folding table, and more particularly to an improved structure for a folding table that can be put in a vehicle and used outdoors.

[0002]

## Prior Art

Figs. 8 and 9 illustrate examples of conventional folding tables that can be carried in vehicles. In these drawings, leg units 7 and 8 are provided at the respective ends on the rear of a table top 1. These leg units 7 and 8 are made of pipes bent in a U shape, and have left and right leg components 71, 72, 81, and 82, and proximal components 73 and 83 that link these leg components. The left and right leg components 71, 72, 81, and 82 are linked in their middle by linking members 74 and 84. Proximal components 73 and 83 are rotatably linked to the rear of the table top 1 by hinge brackets 91 and 92. When the table is to be put away, as shown in Fig. 8, the leg units 7 and 8 are each folded in toward the rear of the table top 1, and when the table is to be used, as shown in Fig. 9, the leg units 7 and 8 are pulled out from the rear of the table top 1 and rotated around the proximal components 73 and 83, respectively.

[0003]

## Problems Which the Invention is Intended to Solve

With the conventional folding table discussed above, the leg components of the leg units 7 and 8 must be of the proper length so that the table will stand at the proper height when used, but when the leg units 7 and 8 are folded in toward the rear of the table top 1, the leg components 71, 72, 81, and 82 of the leg units 7 and 8 interfere with each other. As shown in Fig. 9, this has been dealt with in the past by making the distance (a) between the leg components of one leg unit 8 shorter than the distance (b) of the other leg unit 7, so that the leg unit 8 would be located to the inside of the leg unit 7, which avoided interference between the leg components 71, 72, 81, and 82. However, since the width (c) of the table top 1 is limited to the size that can fit in the storage space in a vehicle, the leg unit 8 positioned to the inside of the leg unit 7 did not have adequate distance (a) between its leg components, which resulted in less stability when the table was used.

[0004] It is an object of the present invention to solve this problem and provide a folding table with which leg units can be folded without interfering with each other on the rear of the table top, and table stability is enhanced by ensuring adequate space between the leg components of the leg units during use of the table.

[0005]

## Means Used to Solve the Above-Mentioned Problems

To achieve the stated object, the first invention herein comprises a table top (1), a first leg unit (2) that is provided at one end on the rear of the table top (1), has left and right leg components (21, 22), is folded in toward the rear of the table top (1) when the table is to be put away, and is pulled out and rotated away from the rear of the table top (1) when the table is to be used, and a second leg unit (3) and third leg unit (4) that are in the form of poles that are provided on the left and right, respectively, at the other end on the rear of the table top (1), are located to the inside of the left and right leg components (21, 22) of the first leg unit (2) when folded in toward the rear of the table top (1) when the table is to be put away, and are pulled out and rotated away from the rear of the table top (1) around proximal ends (32, 42), respectively, when the table is to be used, so that distal ends (33, 43) thereof move to positions where the spacing therebetween is equal to

or greater than the spacing between distal ends (211, 221) of the left and right leg components (21, 22) of the first leg unit (2).

[0006] With this first invention, when the second and third leg units have been folded, they are located to the inside of the left and right leg components, respectively, of the first leg unit, and therefore do not interfere with the first leg unit. When the table is to be used, the second and third leg units are pulled outward and rotated away from the rear of the table top, and the distal ends thereof move to positions where the spacing therebetween is equal to or greater than the spacing between distal ends of the left and right leg components of the first leg unit, so the leg components are kept adequately spaced apart and the table has good stability.

[0007] With the second invention, the first leg unit (2) is formed in one substantially U-shaped piece, having a proximal component (23) linking the left and right leg components (21, 22).

[0008] In this second invention, the first leg unit having left and right leg components can be easily manufactured by integral molding.

[0009] With the third invention, the left and right leg components (21, 22) of the first leg unit (2) together form a tapering shape so that the distance therebetween gradually widens toward distal ends (211, 221).

[0010] In this third invention, the stability of the table during its use is further increased by the tapering shape of the left and right leg components of the first leg unit.

[0011] With the fourth invention, the second leg unit (3) and the third leg unit (4) together form a tapering shape so that the distance therebetween gradually narrows toward distal ends (33, 43) when folded in toward the rear of the table top (1), and are pulled out and rotated away from the rear of the table top (1) around proximal ends (32, 42), respectively, when the table is to be used, so that their tapering shape becomes inverted, with the distance therebetween gradually widening toward the distal ends (33, 43).

[0012] In this fourth invention, the second and third leg units can be folded in toward the rear of the table top without interfering with the first leg unit, and are pulled out and rotated when the table is to be used, so that their tapering shape becomes inverted, with the distance therebetween gradually widening toward the distal ends, which further increases table stability during use.

[0013] With the fifth invention, the second leg unit (3) and the third leg unit (4) are such that the rotational axis (617) of the proximal ends (32, 42) angles downward to the outside of the table top (1).

[0014] In this fifth invention, the result of having the rotational axis angle downward to the outside of the table top is that the second and third leg units are deployed farther outward when pulled out and rotated when the table is to be used. This affords adequate spacing between the leg components during use of the table, and further increases table stability.

[0015]

## Embodiments of the Invention

Fig. 1 is an oblique view of the rear of a folding table when the leg units have been folded in. In this drawing, a rectangular table top 1 is manufactured by blow molding a resin material, for example, a leg unit 2 is provided on the rear of this table top 1, and leg units 3 and 4 are provided to the inside of this leg unit 2. The leg unit 2 consists of a pipe bent substantially in a U shape, and comprises left and right (upper and lower in the drawing) leg components 21 and 22 positioned on the long sides of the table top 1, and a proximal component 23 that links these leg components. The proximal component 23 of the leg unit 2 is rotatably linked to the rear of the table top 1 by a hinge bracket 51, and the left and right leg components 21 and 22, except for the portions near the proximal component 23, together form a tapering shape so that the distance therebetween gradually increases toward the distal ends 211 and 221. As shown in Fig. 2, these leg components 21 and 22 are positioned in groove-shaped recesses 11 and 12 with an arc-shaped cross section, formed in the rear of the table top 1, so that the protrusion height of the leg components 21 and 22 is about the same as the protrusion height of a skirt 13 around the table top 1. The middle parts of the leg components 21 and 22 are respectively positioned by being fitted into semicircular recesses 141 and 151 (Fig. 3) of latching components 14 and 15 (Fig. 1) formed protruding from the rear of the table top 1, and are linked together by a rectangular linking bar 24. Link mechanisms 52A and 52B, for holding the leg components 21 and 22 in their extended state when the leg components 21 and 22 have been pulled out and rotated away for table use, are installed on the outer sides of the leg components 21 and 22 near the proximal component 23. The basic structure of the link mechanisms 52A and 52B is the same as that of the components provided to the leg units 3 and 4, as discussed below.

[0016] The leg units 3 and 4 are respectively located to the inside of the left and right leg components 21 and 22 of the leg unit 2. These leg units 3 and 4 consist of straight pipes that each angle inward at an angle  $\alpha$  with respect to the inner edge of the table top 1, and together form a tapering shape so that the distance therebetween gradually narrows toward the distal ends 33 and 43. The proximal ends 32 and 42 of the leg units 3 and 4 are rotatably linked to the rear of the table top 1 by hinge brackets 61A and 61B, respectively, and link mechanisms 52C and 52D are provided between the hinge brackets 61A and 61B and the proximal end side surfaces of the leg units 3 and 4, respectively.

Fig. 4 is a detail view of the hinge bracket 61A and the link mechanism 52C. The hinge bracket 61A consists of a metal plate bent upward at both sides, and is fixed to the rear of the table top 1 through attachment holes 611, 612, and 613 provided at the end and on the left and right sides. Bearing holes 614 and 615 are provided on the left and right sides. A tubular component 34 of the leg unit proximal end 32 is aligned with these bearing holes, and a pin 617 (a rotating shaft) is inserted into the tubular component 34 through the bearing holes 614 and 615, which rotatably links the leg unit 3. The above-mentioned pin 617 spanning the space between the bearing holes 614 and 615 angles downward, at an angle of  $\theta$  to the horizontal plane, from the inside of the table top 1 (in front in Fig. 4) toward the outside.

[0017] The link mechanism 52C consists of two link plates 521 and 522 rotatably linked together in series, with one end of the link plate 521 being rotatably pin-linked to an attachment hole 616 on the side edge of the hinge bracket 61A, and one end of the link

plate 522 being rotatably pin-linked to the side surface of the leg unit 3. A stopper tab 523 is provided to the linked part of the link plates 521 and 522, which prevents these link plates 521 and 522 from rotating to the opposite side. The hinge bracket 61B and the link mechanism 52D are structured the same as above.

[0018] Just as with the leg unit 2, the leg units 3 and 4 are also located in groove-shaped recesses 16 and 17 (Fig. 2) formed on the rear of the table top 1, and the middle parts are positioned by being fitted into semicircular recesses 142 and 152 (Fig. 3) of the latching components 14 and 15 formed protruding from the rear of the table top 1. The only difference in the link mechanisms 52A and 52B installed on the leg unit 2 as described above is that the link plates constituting these mechanisms are linked at one end to bearing plates 53A and 53B instead of to hinge brackets, and the rest of the structure is the same. A linking member 41 is rotatably linked at one end to the middle part of the leg unit 4, and is fixed to a latching component 16 on the underside of the table top 1. Meanwhile, a prong 31 that latches a distal end hook 411 of the linking member 41 is provided in the middle part of the leg unit 3.

[0019] With a folding table structured in this way, when the table is to be used, the left and right leg components 21 and 22 of the leg unit 2 are pulled out and rotated around the proximal component 23, then the left and right leg units 3 and 4 are pulled out and rotated around the pin 617 inserted in the proximal end tubular component 34 (Fig. 4). This state is shown in Fig. 5. The extended leg units 2, 3, and 4 are held in this extended state by the link mechanisms 52A to 52D provided thereto. The distal end hook 411 of the linking component 41 is latched onto the prong 31 to link the leg units 3 and 4 together. In this state, as shown in Fig. 6, the leg units 2, 3, and 4 angle downward and to the outside of the table top 1 in the lengthwise direction of the table top 1, so that the table remains stable in this direction during use. In the lateral direction of the table top 1, as shown in Fig. 7, the leg unit 2 forms a tapering shape so that the distance between the left and right leg components 21 and 22 is substantially equal to the width of the table top 1, and the left and right leg units 3 and 4, as discussed above, are provided at an angle  $\alpha$  to the inner edges of the table top 1 (Fig. 1), and the pin 617 (Fig. 4) that serves as the center of rotation forms an angle  $\theta$  to the horizontal plane, the result being that the leg units 3 and 4 rotate to the outside of the table top 1 when pulled out, and their distal ends 33 and 43 move to positions where the spacing therebetween is equal to or greater than the spacing between the distal ends of the left and right leg components 21 and 22, so as to form a tapering shape, thereby affording good stability in this direction. In particular, because the center of rotation is angled, the leg units 3 and 4 are deployed farther outward from inside the table top 1.

[0020] In the above embodiment, the left and right leg units 3 and 4 were inclined at an angle of  $\alpha$  to the inner edges of the table top 1, and the pin 617 serving as the rotating shaft was also inclined, so the leg units 3 and 4 swung out farther from the inside, but it is also possible to employ just one of these structures or the other. Also, the leg unit 2 may consist of two separate leg components 21 and 22 on the left and right, in which case if the proximal end rotating shafts of these leg components 21 and 22 are provided at an angle, the left and right leg components will open in a tapering shape when pulled out and rotated, thereby increasing stability.

[0021]

## Effect of the Invention

As discussed above, with the folding table of the present invention, the leg units can be folded without interfering with each other on the rear of the table top, and table stability is enhanced by ensuring adequate space between the leg components of the leg units during use of the table.

## Brief Description of the Figures

Fig. 1 is an oblique view of an embodiment of the present invention, seen from the rear of the folding table when the leg units have been folded in;

Fig. 2 is a cross section along the II-II line in Fig. 1;

Fig. 3 is a cross section along the III-III line in Fig. 1;

Fig. 4 is an exploded oblique view of the proximal end linking component of the leg units;

Fig. 5 is an oblique view from the rear of the folding table when the leg units have been extended;

Fig. 6 is a simplified side view of the folding table viewed in the lengthwise direction when the leg units have been extended;

Fig. 7 is a simplified side view of the folding table viewed in the width direction when the leg units have been extended;

Fig. 8 is an oblique view of a conventional example, seen from the rear of the folding table when the leg units have been folded in; and

Fig. 9 is an oblique view from the rear of the folding table when the leg units have been extended.

## Key:

1 ... table top, 2 ... leg unit, 21, 22 ... leg component, 211, 221 ... distal end, 23 ... proximal component, 3, 4 ... leg unit, 32, 42 ... proximal end, 33, 43 ... distal end, 617 ... pin

Fig. 2

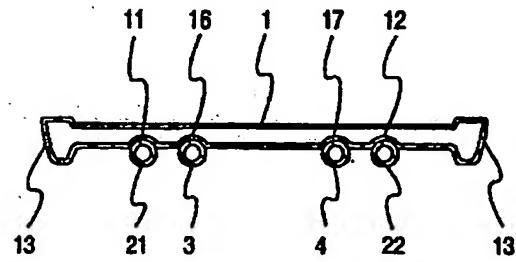


Fig. 3

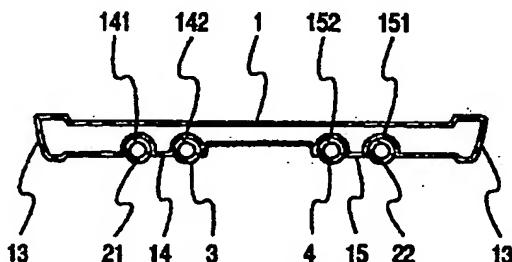


Fig. 1

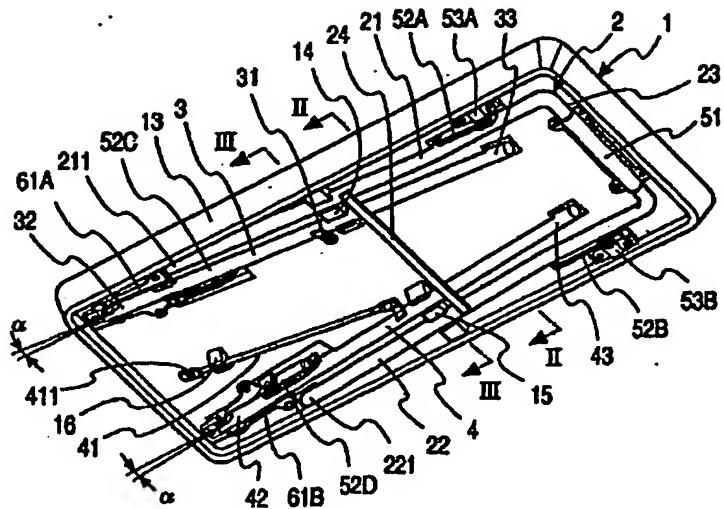


Fig. 7

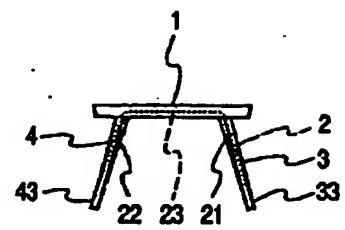


Fig. 4

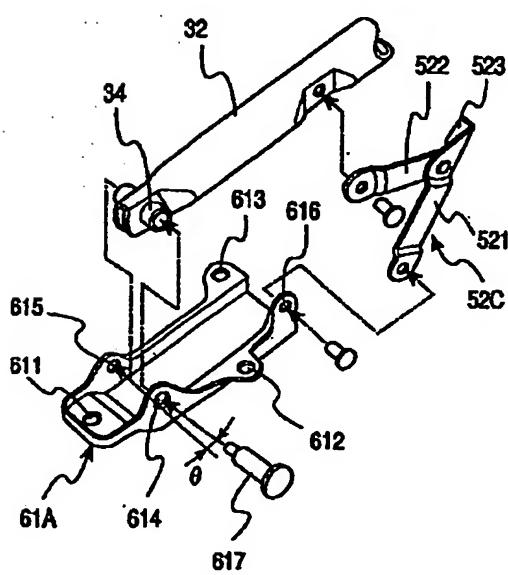


Fig. 5

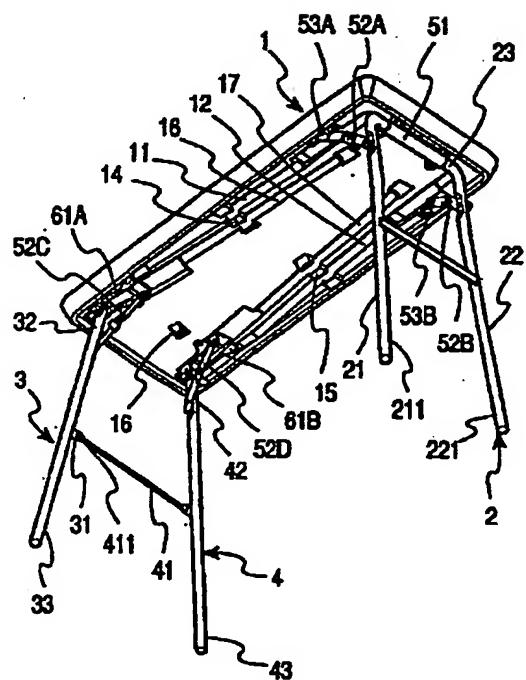


Fig. 6

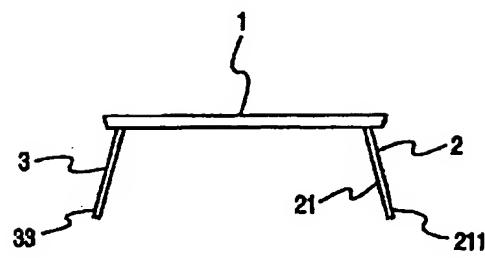


Fig. 8

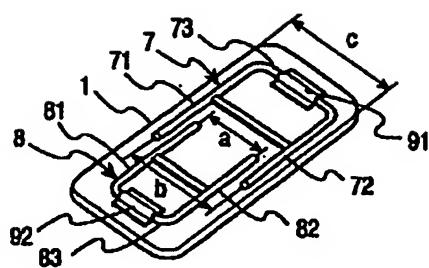
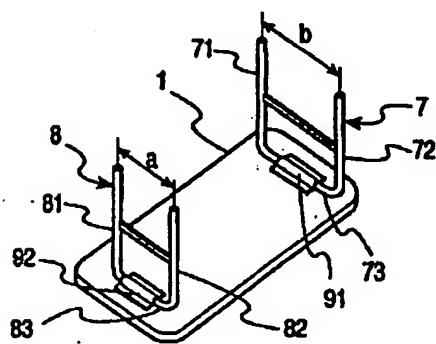


Fig. 9



PATENT GAZETTE  
REPUBLIC OF CHINA (19) (12)

(11) Publication No.: 320006

(44) Date: November 11, 1997

NEW MODEL

(51) (Illegible)

(54) Name of Item: FOLDABLE ROUND TABLE

(21) Application No.: 86203996

(22) Date of Application: Mar. 15, 1997

(72) Inventor:

Kao San Chen

No. 282, Sec. 2, Shulin St., Tainan, Taiwan

(71) Assignee:

Tingching Enterprise Co., Ltd.

No. 248, I-lin Rd., Tainan Hsian, Taiwan

(74) Representatives: Mr. I Chuen Hwei, Mr. Wei Ian Kang

1

2

(57) Scope of patent application:

1. A foldable round table comprised of:  
a table top which includes a pair of butted sets connected to each other by a pair of pivoting latches for pivotable folding to lean on each other. Each butted set has a board and an edge frame around the board. Each edge frame includes a straight section to butt each other and at least a curved section;  
two pairs of brackets. Each pair is evenly mounted under the tabletop. Each bracket includes a main supporting section positioned underneath the board, a plain portion connected to the straight section of the table top and a curved portion connected to the curved section of the table top; and  
two leg frame members. Each correspondingly pivotally connected between a pair of brackets. Each leg frame member can be folded to lean onto lower surface of the board and stored within each edge frame.
2. One of the butted set of the foldable round

table, which is under Patent Application Scope 1, has a handle mounted at the center of the curved section. The handle has a rotateable hook at both ends. There are two pins mounted at the other butted set for securing to the hooks to hold two butted sets in folding position.

3. Each supporting section of the foldable round table, which is under Patent Application Scope 1, has an attaching portion for connecting bracket onto the lower surface of the board.

Brief Description of The Drawings

FIG. 1 is a perspective overview of the invention-a better design than others.

FIG. 2 is an underneath view of the invention-a better design than others.

FIG. 3 is a side view of the invention-a better design than others.

FIG. 4 is a folded view of the invention-a better design than others.

附  
件

中華民國專利公報 (19) (12)

(1) 公告編號：320006

(4) 中華民國86年(1997)11月11日

(5) Inv. No.: A4783/00

新 型

全 3 页

(14) 名稱：折合式圓弧桌

(21) 申請案號：86203996

(22) 申請日期：中華民國86年(1997)03月15日

(12) 創作人：  
陳高山

台南市樹林街二段二八三號

(13) 申請人：  
延慶商業股份有限公司

台南縣仁德鄉義林路二四八號

(14) 代理人：陳松群 先生 康偉吉 先生

2

[57] 申請專利範圍：

1. 一種折合式圓弧桌，其包含：

一桌面，具有兩可靠合之對接座以及將對接座樞設之兩樞紐，每一對接座均係在一靠板周緣框設一邊框，該邊框上具有一相靠合之平直段，以及至少一相對應的圓弧段；

四銜接板，乃兩個乙組對應固定在桌面之兩對接座底端，每一銜接板均具有一位於靠板下方之主架部、一和平直段貼靠、固定之平直樞部，以及一可和桌面之圓弧段貼靠、固定之彎弧樞部；

二腳架，分別對應架設位在同一對接座上之兩銜接板間，並可以樞設之兩樞軸為支點向桌面之靠板底端收折，而收藏在桌面之邊框內。

2. 依據申請專利範圍第1項所述之折合式圓弧桌，其中該桌面上其中一對接座的

圓弧段中央部位組裝有一握把，於握把兩側各組裝一可旋動之卡鉤，在另一對接座上則突出兩卡桿，俾在兩對接座收合時供兩卡鉤鉤設。

5. 3. 依據申請專利範圍第1項所述之折合式圓弧桌，其中該等銜板之主架部上乃延伸一可貼靠於桌面之靠板底端的靠抵部

圖示簡單說明：

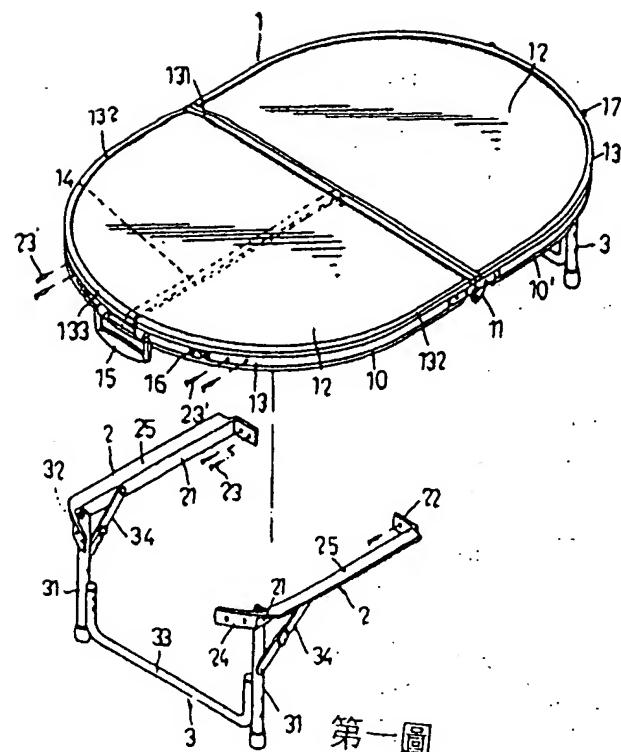
10. 第一圖所示係本創作一較佳可行實施例之立體分解圖。

11. 第二圖所示係本創作一較佳可行實施例之組合仰視圖。

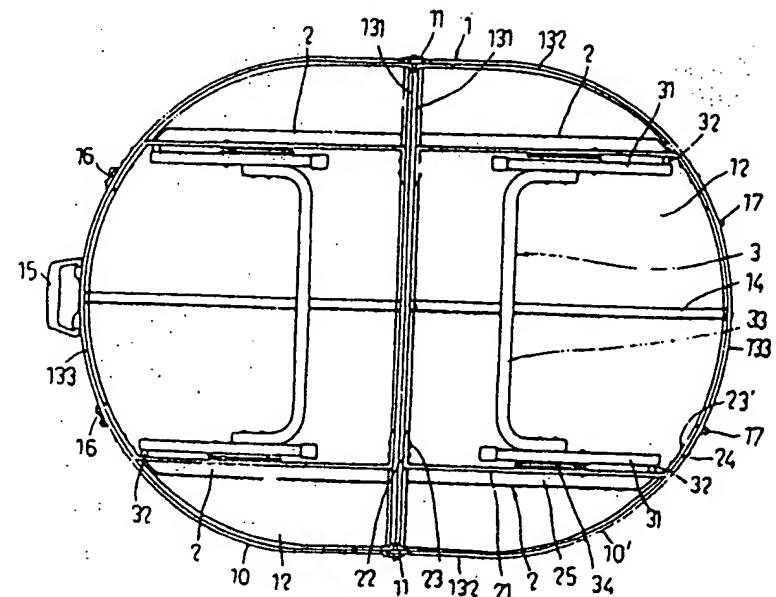
12. 第三圖所示係本創作一較佳可行實施例之組合側視圖。

13. 第四圖所示係本創作一較佳可行實施例之收合立體圖。

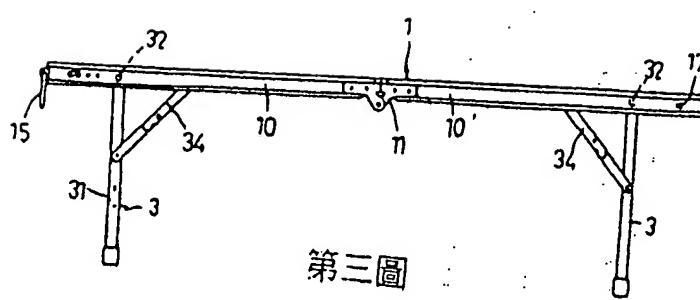
(2)



第一圖

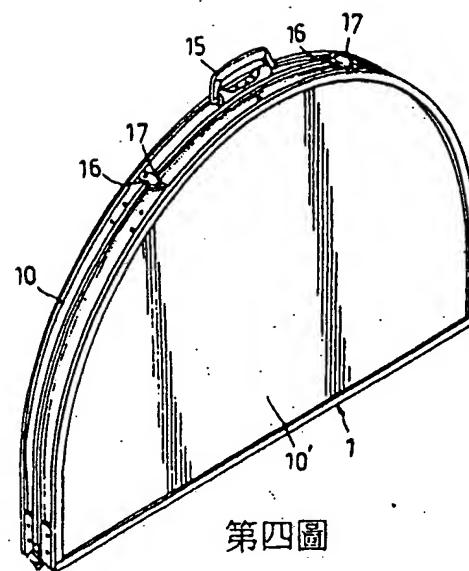


第二圖



第三圖

(3)



第四圖

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**